

**DISHWASHER**



with  
electro mechanical controller



**Dishwasher**



with  
electro mechanical  
controller

© Electrolux  
Muggenhofer Straße 135  
D-90429 Nürnberg  
Germany

Publ.-Nr.:  
**599 516 423**  
EN

Fax +49 (0)911 323 1022

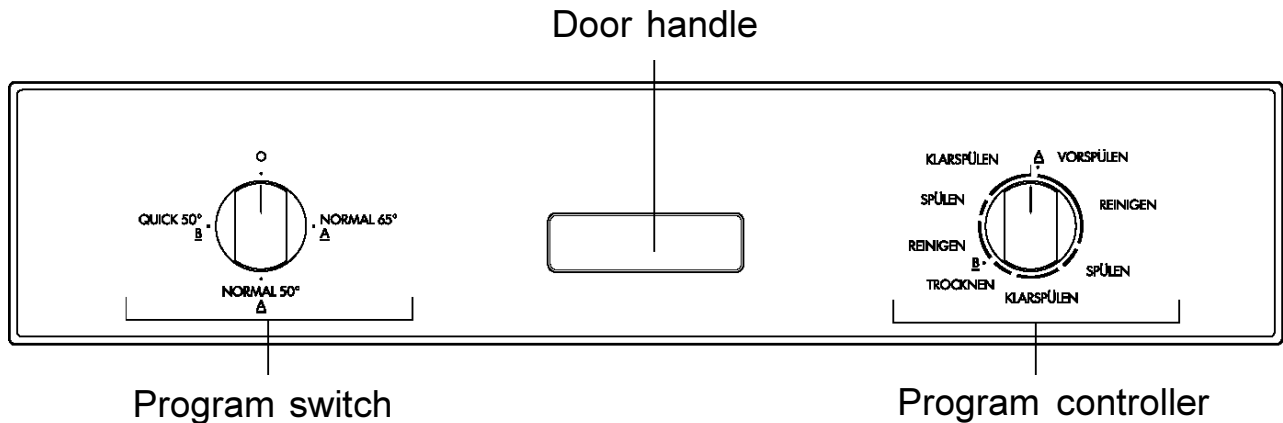
Spares Operation

Ausgabe: 03.2003  
R.Kurzke

# Index

|        |  |         |
|--------|--|---------|
| 1.     | Control panel .....                      | 3       |
| 2.     | Dimensions / Installation .....          | 3       |
| 3.     | Components .....                         | 4       |
| 3.1    | Controller .....                         | 4       |
| 3.2.   | Program switch .....                     | 4       |
| 3.3    | Circulation pump .....                   | 4       |
| 3.4    | Drain pump .....                         | 5       |
| 3.5    | Flow heater .....                        | 5       |
| 3.6    | Interference filter .....                | 5       |
| 3.7    | Detergent dispenser .....                | 6       |
| 3.8    | Thermostat .....                         | 7       |
| 3.9    | Pressure switch .....                    | 7       |
| 3.10   | Spray arms .....                         | 7       |
| 3.11   | Regeneration dosing with condensor ..... | 8       |
| 3.11.1 | Water softening/regeneration .....       | 8       |
| 4.     | Repair informations .....                | 9       |
| 4.1    | Open the housing .....                   | 9       |
| 4.11   | Remove the components .....              | 10      |
| 4.2    | Position of the components .....         | 11- 13  |
| 5.     | Water course Scheme .....                | 14      |
| 5.1    | All-Around Water Protection .....        | 15      |
| 5.2    | Water intake .....                       | 16      |
| 5.3    | Draining .....                           | 17      |
| 6.     | Program steps .....                      | 18      |
| 7.     | Controller steps .....                   | 19      |
| 8.     | Wirings .....                            | 21 - 21 |

## 1. Blendenbeispiel



## 2. Dimensions / Installation

### Dimensions for Freestanding Dishwasher

Height 85 cm  
Width 60 cm  
Depth 60 cm

Height with worktop removed 82 cm  
Feet adjustment 1 cm

### Built-Under Dishwashers

Height 82 - 88 cm  
Width 59,6 cm  
Depth 57 cm

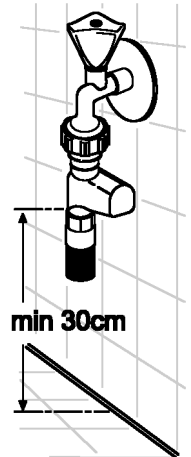
### Integrated Dishwashers

Height 82 - 88 cm  
Width 59,6 cm  
Depth 57 cm

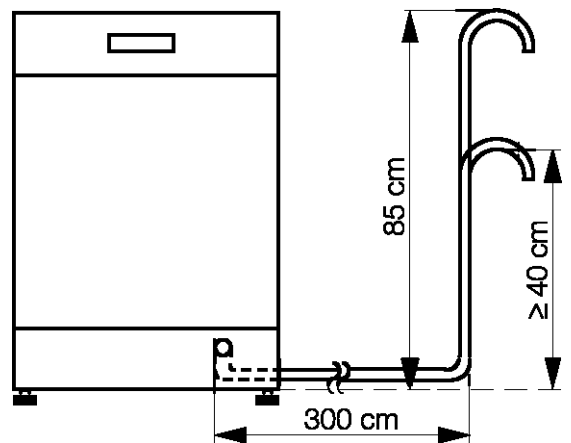
The appliance door can be covered by a wooden/furniture panel of the following dimensions

Width 59,1 - 59,4 cm  
Thickness 1,6 - 2,4 cm  
Height variable (depending on niches or plinth height)  
Weight max. 8 kg

The distance between the lower edge of the safety valve and the footprint of the appliance must be 30 cm.



Extension hoses may be laid for 3 metres horizontal at most and the maximal allowable height of the drain hose then averages 85 cm.



### 3. Components

### 3.1. Program controller

The operating sequence and the duration of the individual wash programs are controlled by this timer. All electric power consumers are connected there.

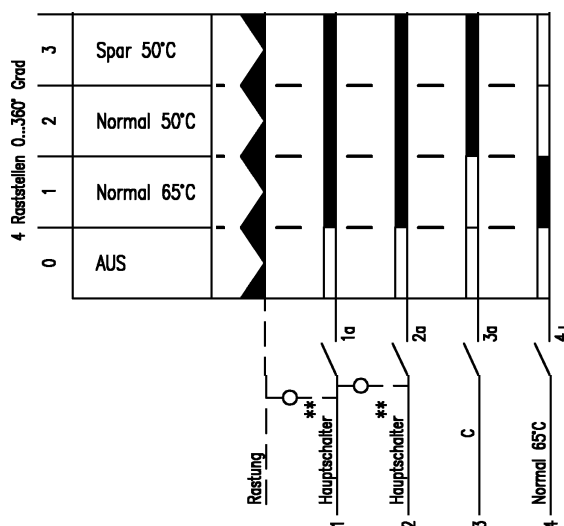
The timer is powered over a synchronous motor.

The complete rotation of the timer is subdivided into 58 switch steps.

For each switch step a determined time from 5 seconds to 24 minutes is defined.



### 3.2. Program switch

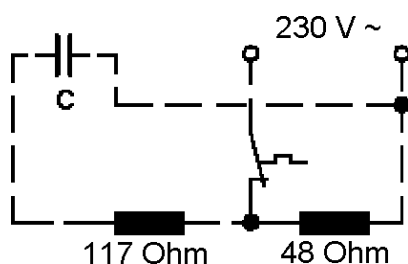


### 3.3. Circulation Pump

The circulation pump is driven by an asynchronous motor with an auxiliary winding. The auxiliary winding is in circuit with a 3  $\mu\text{F}$  capacitor.

Speed for rinsing. 2800 1/min.

Power output 50 W.



### 3.4. Drain Pump

The drain pump is driven by a synchronous motor.

Power output 26 W.

Pump rate 15 l/min.



### 3.5. Flow Heater

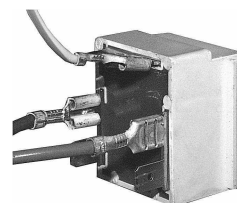
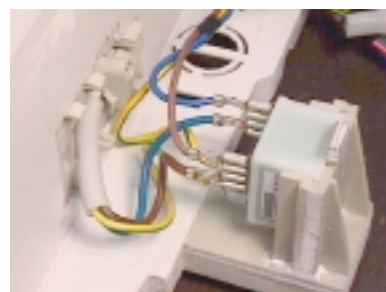
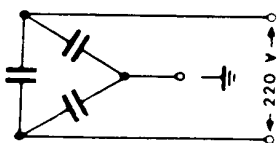
The flow heater heats the water to the required temperature. During the wash cycle, water is constantly passing through the flow heater.

|              |                 |
|--------------|-----------------|
| Power output | 2100 W          |
| Resistor     | 25 $\Omega$     |
| Protector    | 98 °C $\pm$ 5 K |
| Thermal fuse | 260 °C          |



### 3.6. Interference Filter

The interference filter is connected in the terminal board parallel to the mains feed.



### 3.7 Detergent dispenser

#### Dosing of detergent

prewash 10 ml  
wash 20 - 30 ml

#### Dosing of rinse aid

position 1 - 6 2 ml - 7 ml

#### Capacity

140 ml

display „lack of rinse aid“

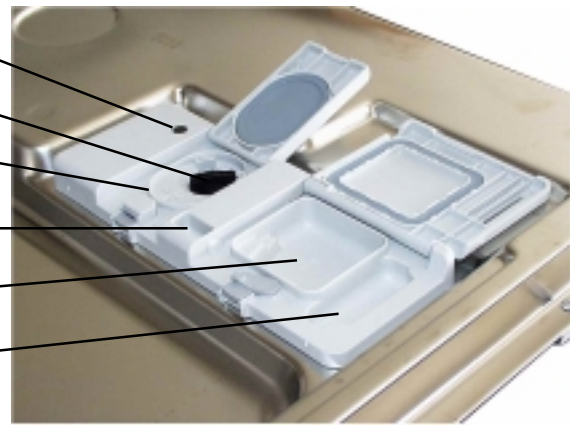
dosing of rinse-aid

maximum filling level

outlet of rinse-aid

detergent tray

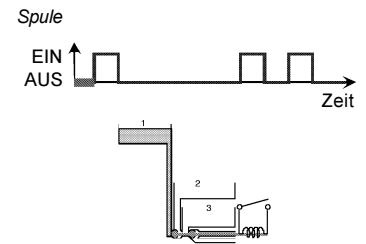
detergent tray for pre wash



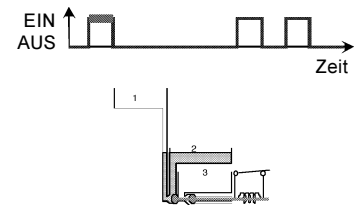
coil



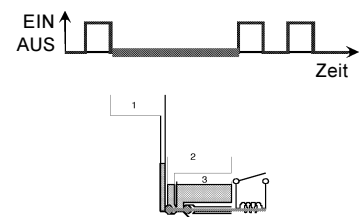
The detergent compartment 1 is filling corresponding to the set dosing quantity when the door is open. Possibly existing rinse-aid in compartments 2 and 3 flows back into the storage tank of the rinse-aid. The detergent trays are filled up. The door will be closed and the detergent for prewash will be rinsed out through the slots in the detergent dispenser cover.



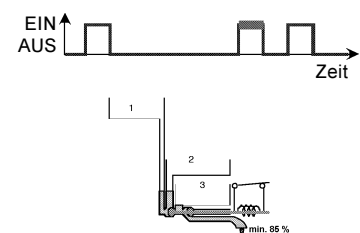
During the washing cycle the coil is switched on and the detergent compartment cover releases the detergent. The rinse-aid flows from compartment 1 into compartment 2.



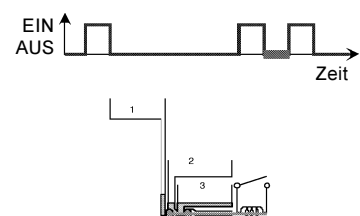
After switching off the coil, the rinse-aid flows from compartment 2 into compartment 3.



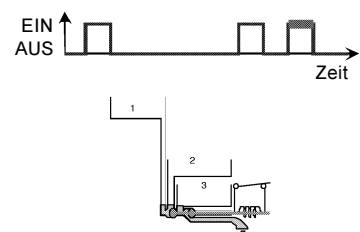
During the rinse cycle, the coil will be switched on when the rinse is warmed and the rinse-aid runs from compartment 3 into the rinse tank. At the same time, the remaining rinse-aid (15 %) runs from compartment 1 into compartment 2.



With the coil switched off, the rinse-aid flows from compartment 2 into compartment 3.



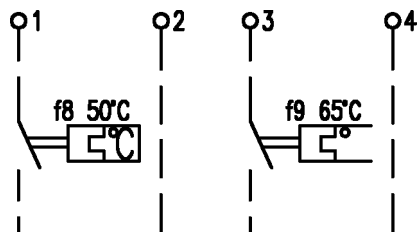
During the rinse cycle, the coil is always switched on twice. When it is switched on the second time, the remaining rinse-aid flows into the rinse tank.



### 3.8. Thermostat

This temperature probe is installed in the drain trough (water collector) and has direct contact with the lye.

|              |      |      |
|--------------|------|------|
| Switch point | 50°C | 65°C |
| Reset point  | 41°C | 55°C |

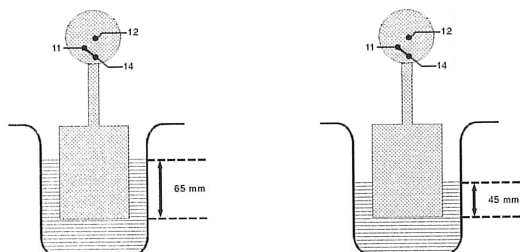


### 3.9. Pressure Switch

The pressure switch controls the water level. Without water, contact 11 - 12 is closed.

|    |                         |          |
|----|-------------------------|----------|
| fN | Switch point with level | 65 mm Ws |
|    | Reset point with level  | 45 mm Ws |

The pressure switch is not adjustable.



### 3.10. Spray arms

The new cutlery basket is placed at the upper dishwasher basket. The ceiling sprayarm sprays the water directly onto the cutlery basket and guarantees an excellent washing result with the cutlery placed in that basket.





### 3.11 Water softening/regeneration

The water softening can be adjusted in 4 steps.

The incoming water flows (quantity in relation to step ...) through the softener which works according to the ion exchange principle.

The ion exchanger is filled with small epoxy resin balls.

The resins exchange the hardness constituents (calcium and magnesium), for sodium ions.

| Step | Water hardness             | Hardness level |
|------|----------------------------|----------------|
| 1    | < 14°d < 25°F < 2,5 mmol/l | I / II         |
| 2*   | < 21°d < 37°F < 3,8 mmol/l | III            |
| 3    | < 28°d < 50°F < 5,0 mmol/l | IV             |
| 4    | < 50°d < 89°F < 9,0 mmol/l | IV             |

\* - factory setting

°d - German degree, dimension of water hardness

°f - French hardness

mmol/l - Millimol per litre, international unit for water hardness

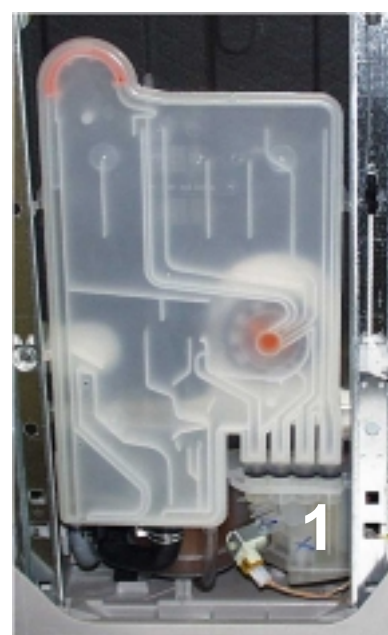
When all the sodium ions are used up, it is necessary to regenerate the softener. This is done by flushing a brine solution through the softener.

Afterwards the softener is washed out with fresh water and is now fully effective.

The regeneration phase is triggered after every rinsing program.

The employed water amount and salt consumption are controlled according to the hardness range setting.

The softening system is designed for a water hardness of up to 50 °dH.



1. Enthärter
2. Regenerier-Dosierung



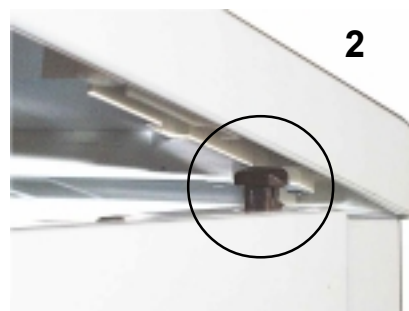
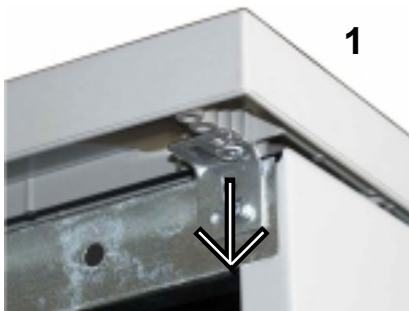


## 4. Service tips

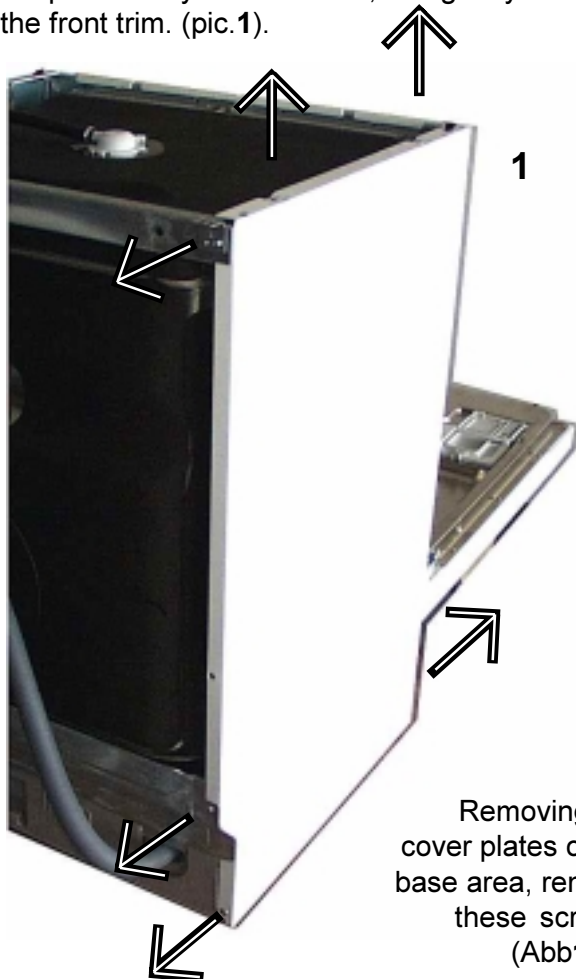
### 4.1 Open the housing

Remove the screws (Abb.1) of the upper plate on the left and right side.

Push the upper plate in front direction to remove the plate (Abb.2).



To remove side panel remove fixing screws, pull the panel away from the rear, and gently out of the front trim. (pic.1).



Removing the cover plates of the base area, remove these screws (Abb1+2).

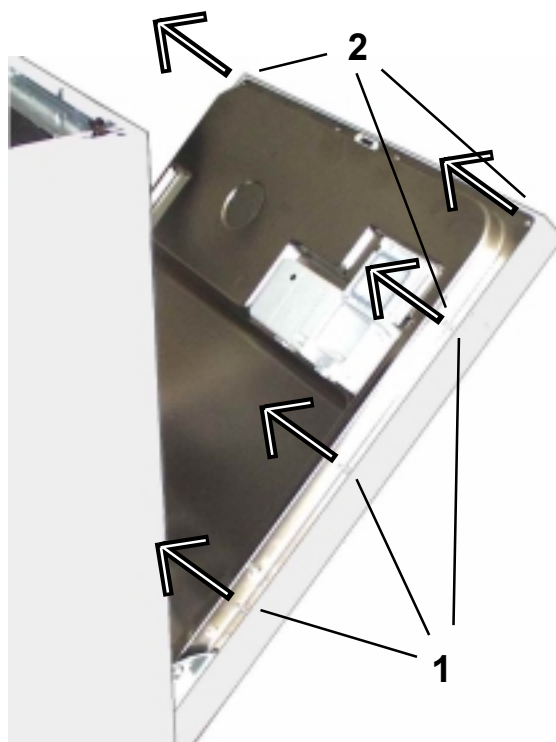


You need  
**Torx** equipment



Remove the screws (1) to pull the outer door away.

To remove the panel, remove the fixing screws (2) .

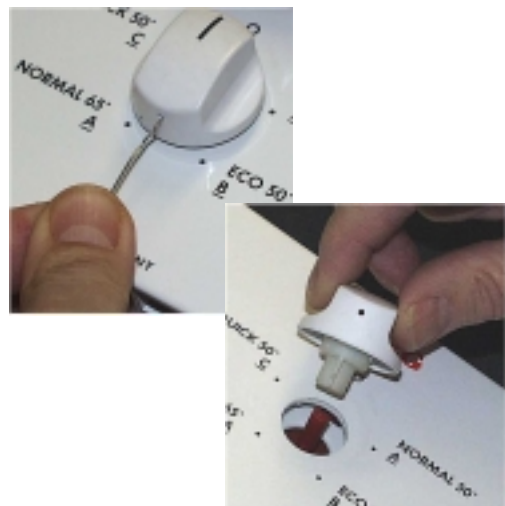


## 4.11. Remove the panel components

### Removal of the toggle switches

You can, through the lateral hole, release the retention spring by pressing it in, for example with a bent-out paper-clip.

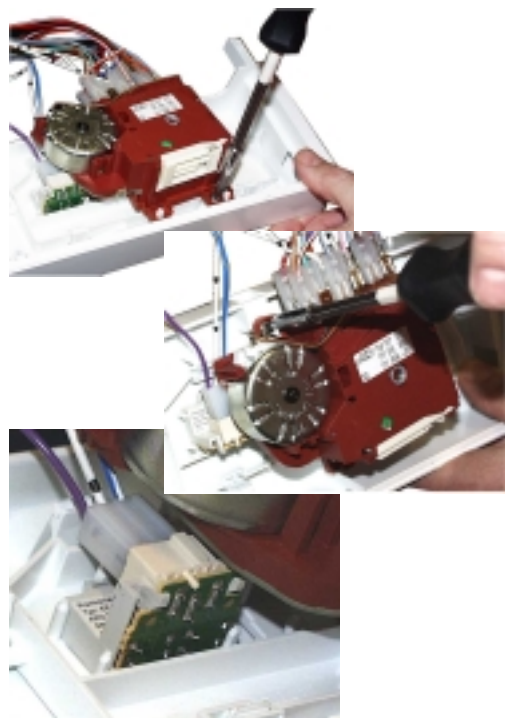
In this way, the toggle can be pulled off easily.



The sequential circuit program is screwed down on two places.

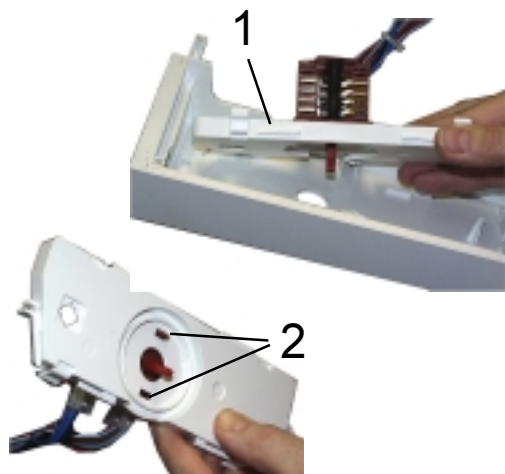
After releasing the screws and removing the toggle, it can be taken off easily.

The LEDs for display are installed (depending on the equipment) in the frame and can be unclicked.



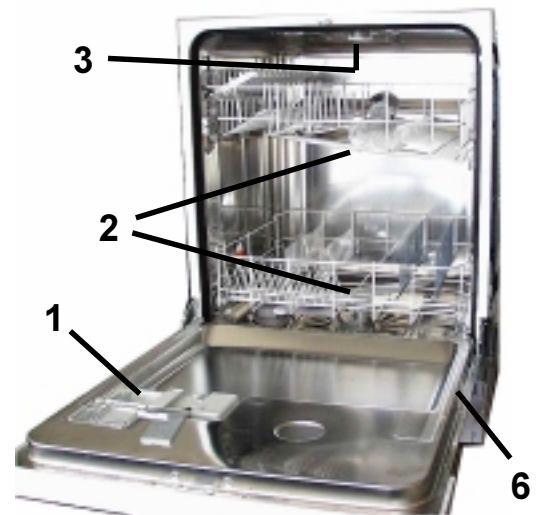
To remove the program selector, the support frame (1) must be unclicked.

By unclicking both locking lugs you have access to the switch.



## 4.2 Position of Components

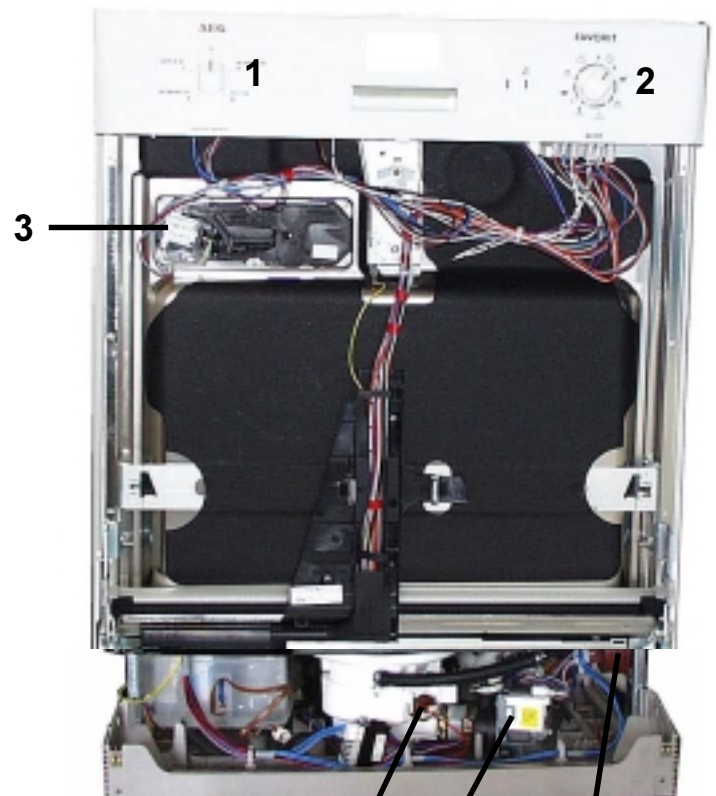
- Detergent dispenser (1)
- Spray arms (2)
- Roof-mounted shower (3)
- Salt container (4)
- Filter (5)
- Type plate (6)



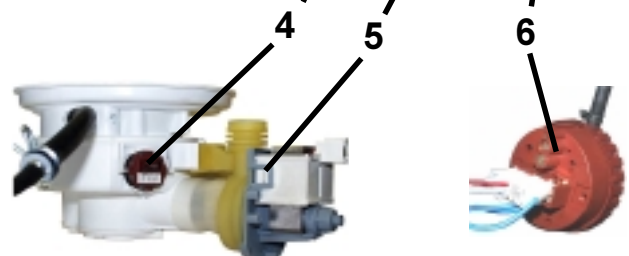
- Program switch (1)
- Program controller (2)



- Detergent dispenser (3)

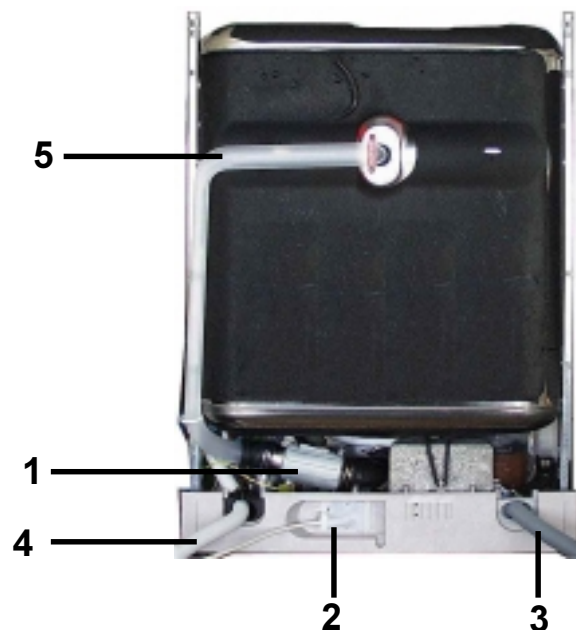


- Thermostat (4)
- Drain pump (5)
- Pressure switch (6)



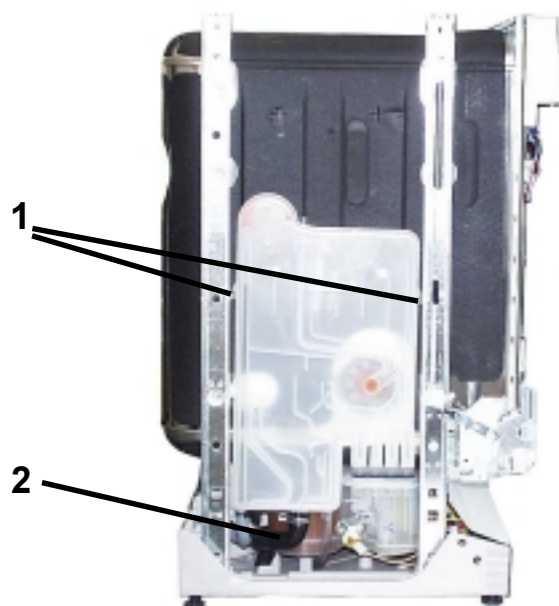
## Back side view

- Flow heater (1)
- Terminal box (2)
- Inlet hose (3)
- Drain hose (4)
- Water inlet for above spray arm (5)



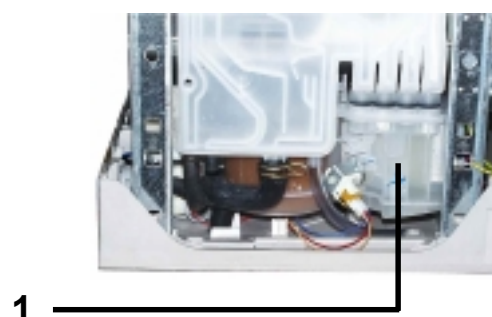
## Removing the detergent dosage chamber:

- disengage locking tabs (1), disconnect hoses (2)
- holding the top of the chamber, pull upwards disengaging it from the softener.



## Removing the softener unit :

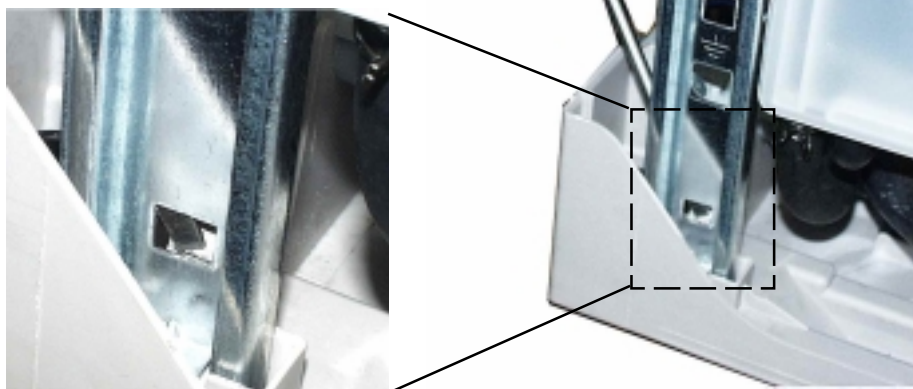
- remove the securing nut located under the salt cap.
- press softener (1) down and remove it through the front from the base area
- CAUTION if accessible release reed switch.





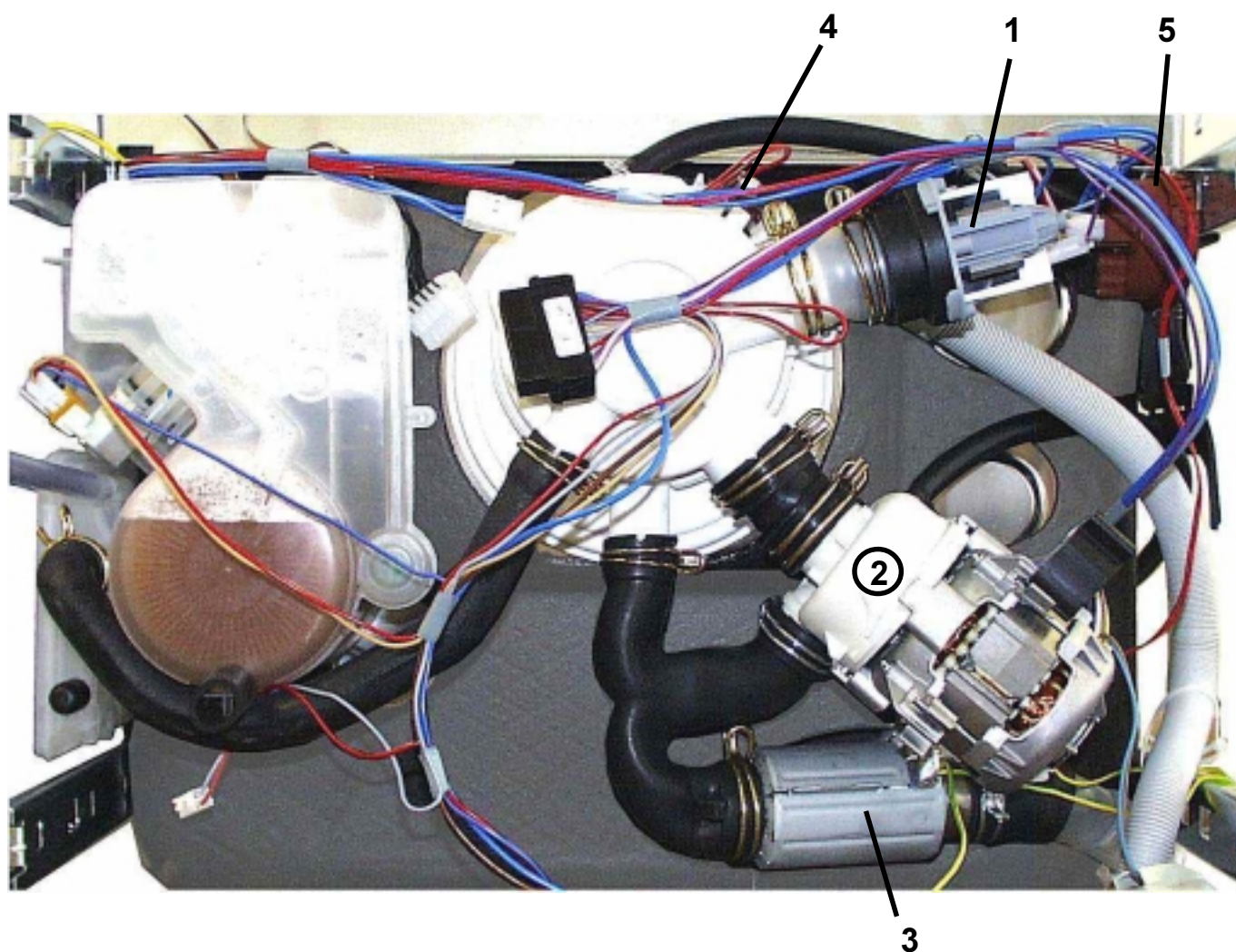
## Removing the base :

- remove side panels, rear panel and plinth panel
- gently release base fixing clips with a screwdriver (figure)
- take off base carefully and release circulation pump, electronic and heater relay
- disconnect the float switch

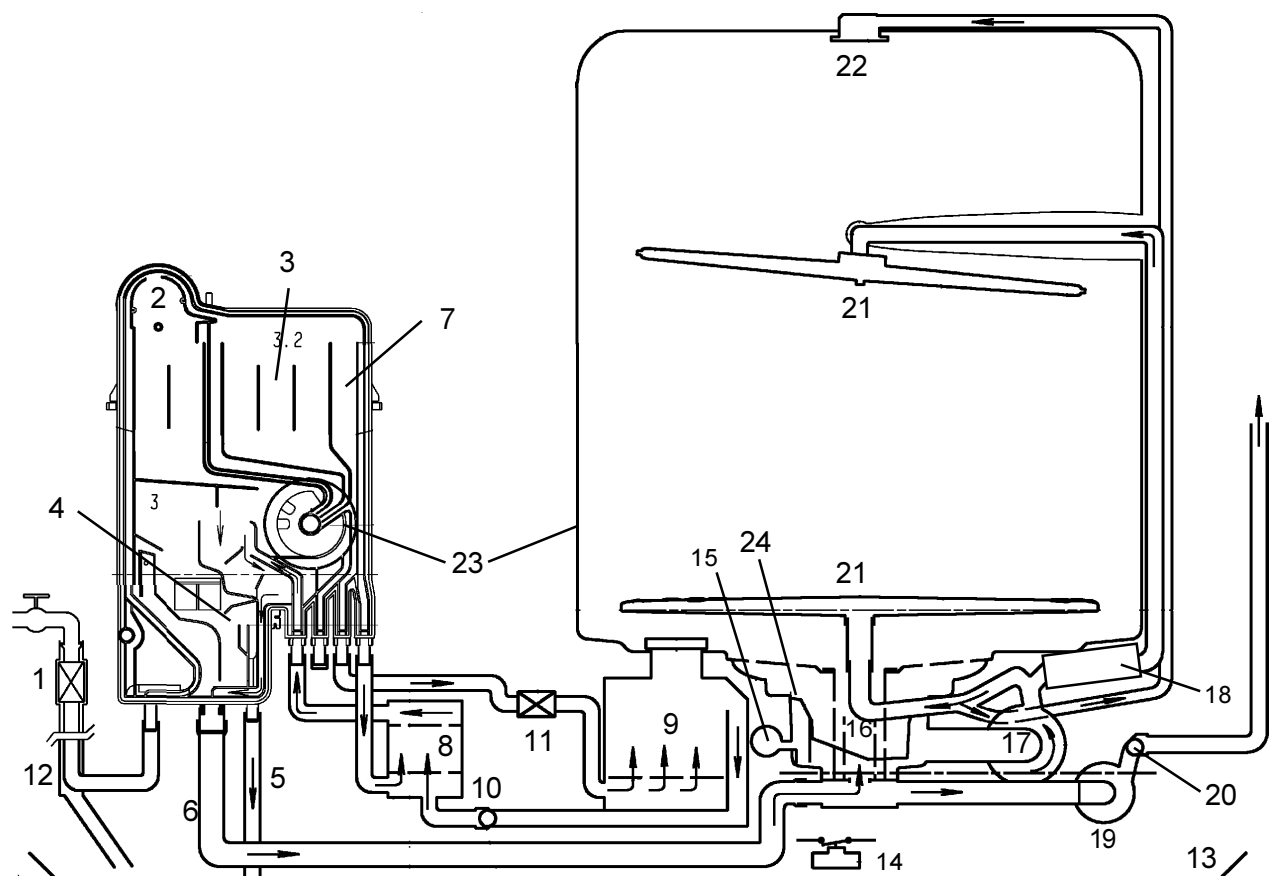


With base removed, following components are accessible:

- Drain pump (1)
- Circulation pump (2)
- Flow heater (3)
- Thermostat (4)
- Pressure switch (5)



## 5. Water course scheme



- |   |  |    |                                 |    |                     |
|---|--|----|---------------------------------|----|---------------------|
| 1 | Inlet valve                                    | 8  | Softener                        | 16 | Filter              |
| 2 | Air break                                      | 9  | Salt container                  | 17 | Circulation pump    |
| 3 | Regeneration water dosage                      | 10 | Non-return valve salt container | 18 | Flow heater         |
| 4 | Overflow safety level                          | 11 | Regeneration valve              | 19 | Drain pump          |
| 5 | Safety overflow                                | 12 | Safety inlet hose               | 20 | Non-return valve    |
| 6 | Inlet to sump from regeneration dosage chamber | 13 | Base tray                       | 21 | Spray arms          |
| 7 | Regeneration dosage chamber                    | 14 | Float switch                    | 22 | Roof-mounted shower |
|   |  | 15 | Pressure switch                 | 23 | Tub vent            |
|   |  |    |                                 | 24 | Sump assembly       |



## 5.1 All-Around Water Protection

### Aqua-Control Inlet Hose

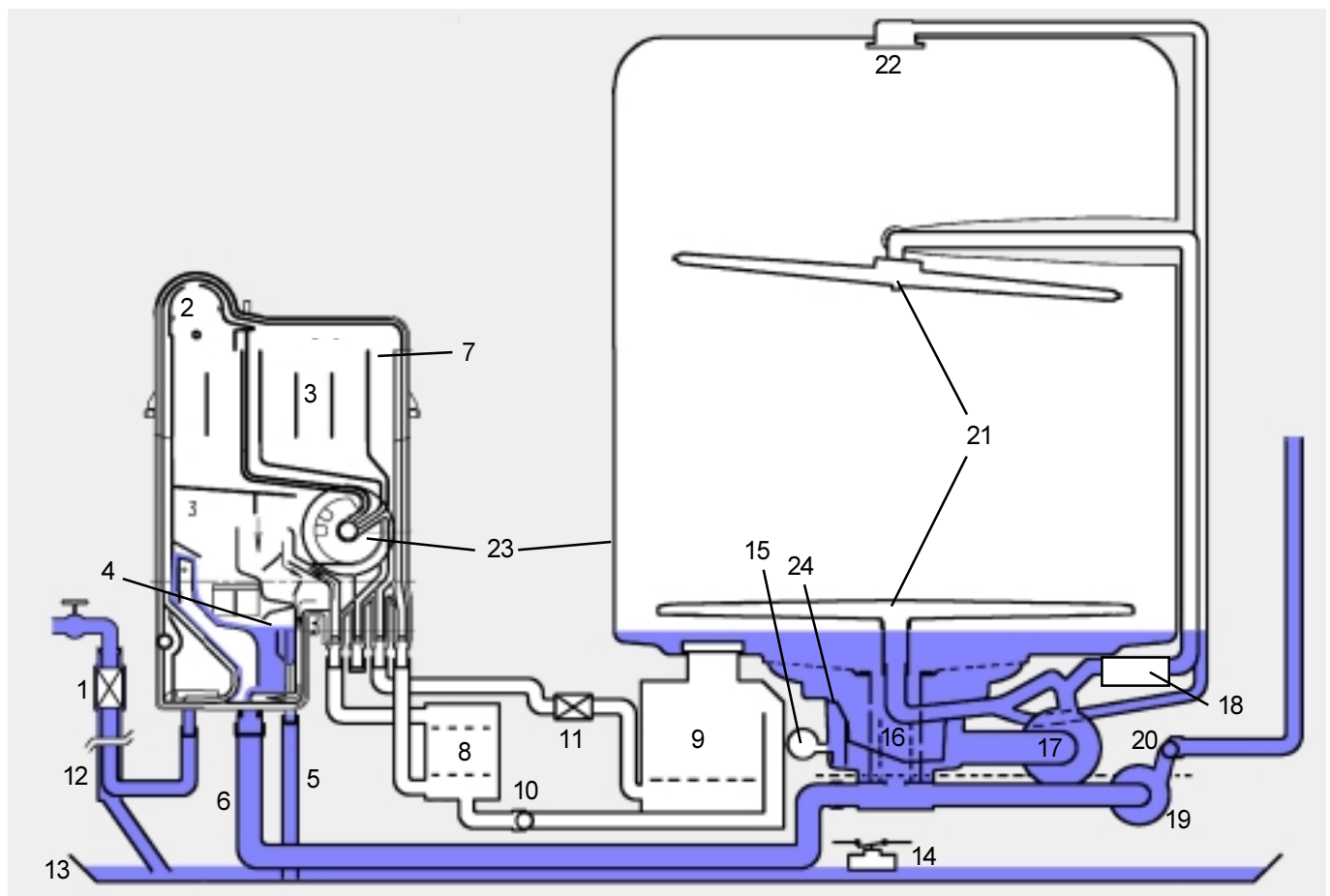
The inlet hose has a double-wall construction. The inner hose is equipped with a flow restrictor built into the tap connection, and has a flow rate of 4 litres per minute. The inlet valve (1) is located in the base of the dishwasher. The safety outer hose (12) is connected to the regeneration chamber. If the inner hose should burst, the water passes into the tub. The safety pressure switch activates the drain pump and decreases the waterlevel down to „normal“ level. An additional overflow protection is a defined overflow through the regeneration chamber. The water flows into the bottom tray and activates the float switch, which energises the drain pump. This drains the dishwasher preventing water damage.

### Safety level

If the safety level is reached by over-filling, the safety pressure switch starts the drain pump. The water is only drained until it has reached the normal level because the reset point of the safety pressure switch is above the switchpoint of the normal pressure switch.

### Leakage Protection

The anti-flood switch in the base tray will activate the drain pump and drain the water from the tub in the event of an internal leakage. If the float switch is activated, all electric components are switched off except the electronic and the drain pump.



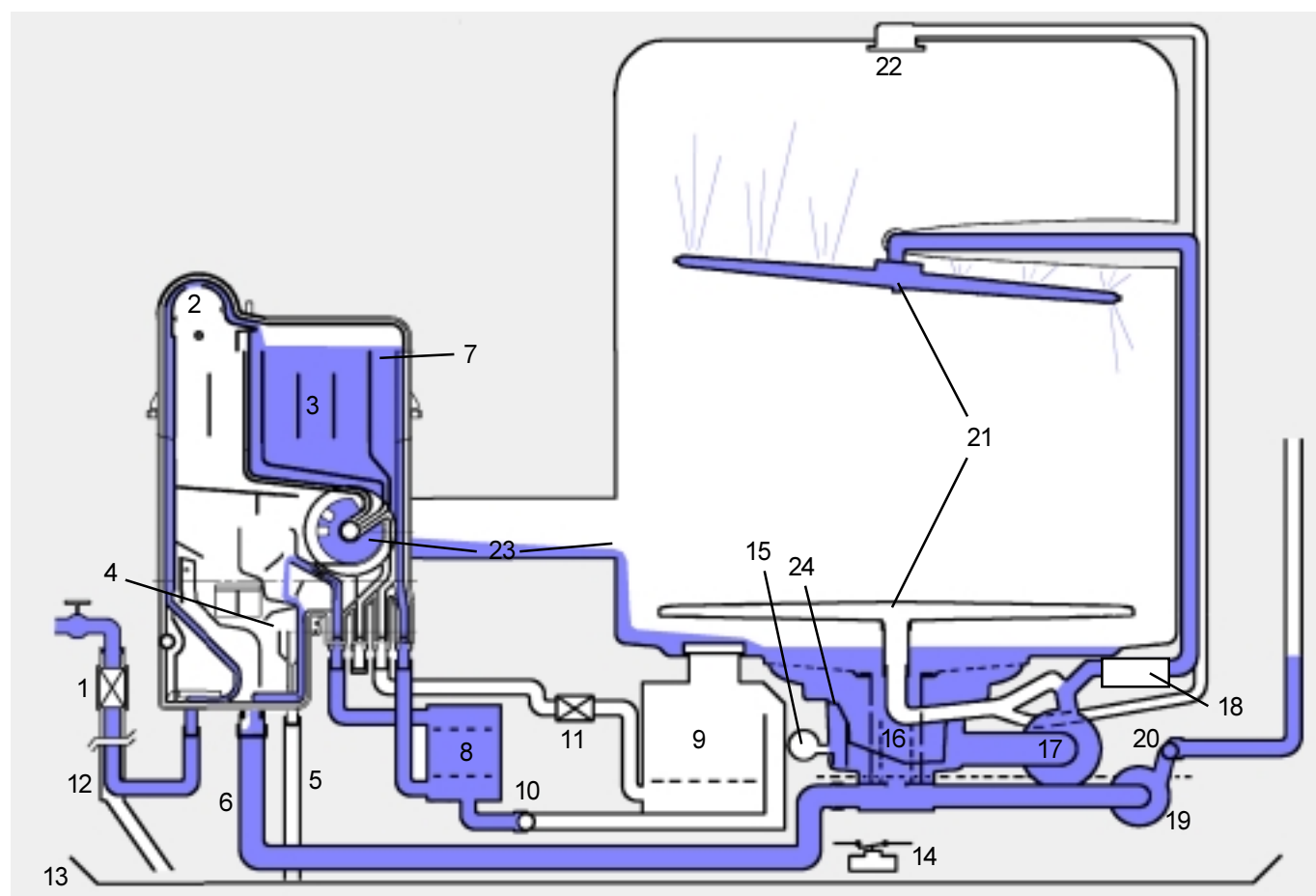
|   |  |    |                                 |    |                     |
|---|--|----|---------------------------------|----|---------------------|
| 1 | Inlet valve                                    | 8  | Softener                        | 16 | Filter              |
| 2 | Air break                                      | 9  | Salt container                  | 17 | Circulation pump    |
| 3 | Regeneration water dosage                      | 10 | Non-return valve salt container | 18 | Flow heater         |
| 4 | Overflow safety level                          | 11 | Regeneration valve              | 19 | Drain pump          |
| 5 | Safety overflow                                | 12 | Safety inlet hose               | 20 | Non-return valve    |
| 6 | Inlet to sump from regeneration dosage chamber | 13 | Base tray                       | 21 | Spray arms          |
| 7 | Regeneration dosage chamber                    | 14 | Float switch                    | 22 | Roof-mounted shower |
|   |  | 15 | Pressure switch                 | 23 | Tub vent            |
|   |  |    |                                 | 24 | Sump assembly       |

## 5.2 Water Inlet

The water flows into the regeneration dosage chamber (7) via inlet valve (1), over air break (2), into regeneration dosage chambers (3) into softener (8). At this point the water divides. 1/4 of the water enters the tub through the vent (23). 3/4 of the water enters the sump (24) through hose (6).

The level control chamber built into the sump operates the pressure switch (15).

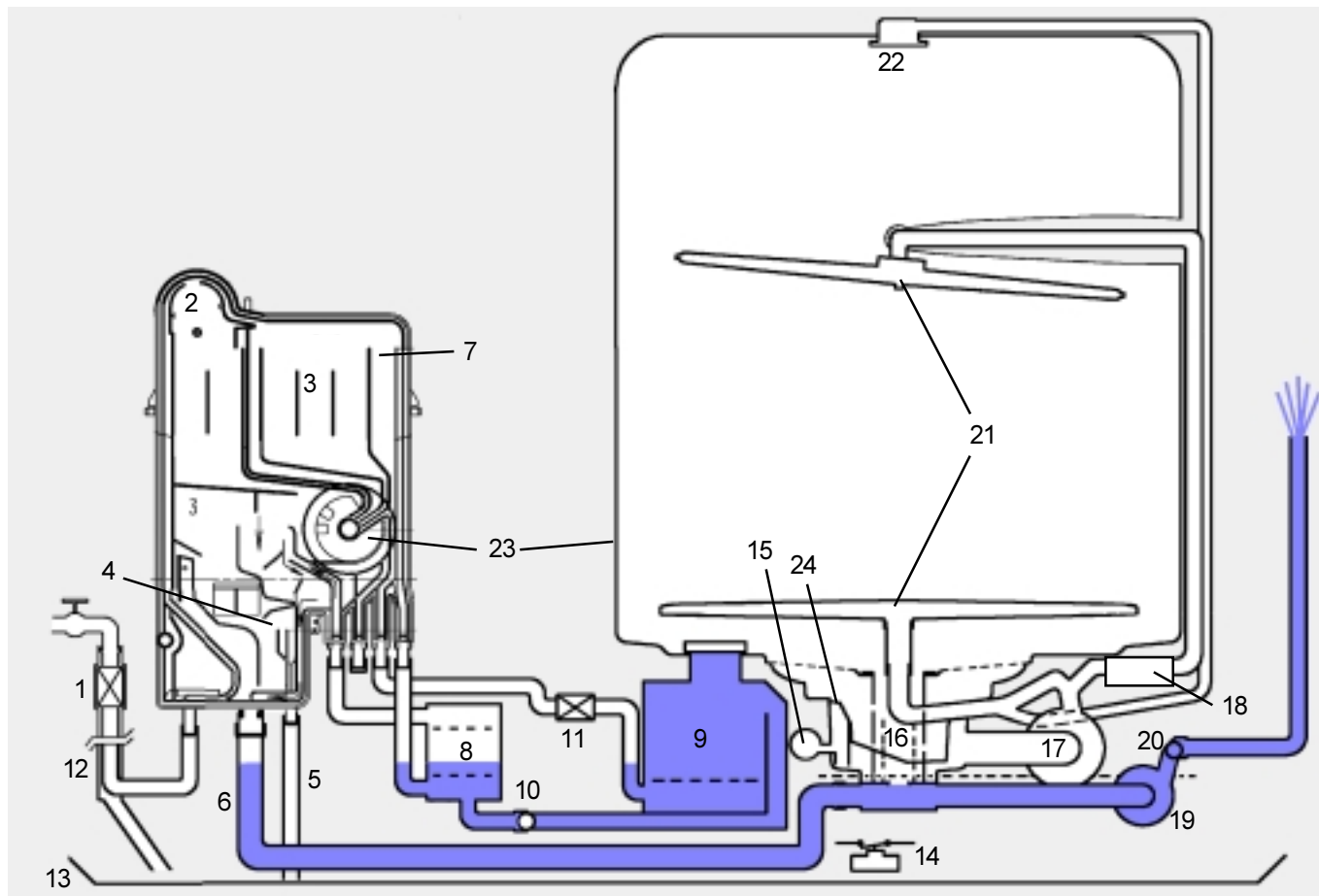
| Step | Water through softener | Water through vent |
|------|------------------------|--------------------|
| 1    | 80 %                   | 20 %               |
| 2    | 90 %                   | 10 %               |
| 3    | 100 %                  | 0 %                |
| 4    | 100 %                  | 0 %                |



- |   |  |    |                                 |    |                     |
|---|--|----|---------------------------------|----|---------------------|
| 1 | Inlet valve                                    | 8  | Softener                        | 16 | Filter              |
| 2 | Air break                                      | 9  | Salt container                  | 17 | Circulation pump    |
| 3 | Regeneration water dosage                      | 10 | Non-return valve salt container | 18 | Flow heater         |
| 4 | Overflow safety level                          | 11 | Regeneration valve              | 19 | Drain pump          |
| 5 | Safety overflow                                | 12 | Safety inlet hose               | 20 | Non-return valve    |
| 6 | Inlet to sump from regeneration dosage chamber | 13 | Base tray                       | 21 | Spray arms          |
| 7 | Regeneration dosage chamber                    | 14 | Float switch                    | 22 | Roof-mounted shower |
|   |  | 15 | Pressure switch                 | 23 | Tub vent            |
|   |  |    |                                 | 24 | Sump assembly       |

## 5.3 Draining

During the wash cycle the water is pumped out at various stages. First the draining water cleans the filters (16). The filters are open at the bottom which allows any soilage to be rinsed off sufficiently. There is a non-return valve (20) at the inlet connection to the drain pump (19). This valve prevents the water

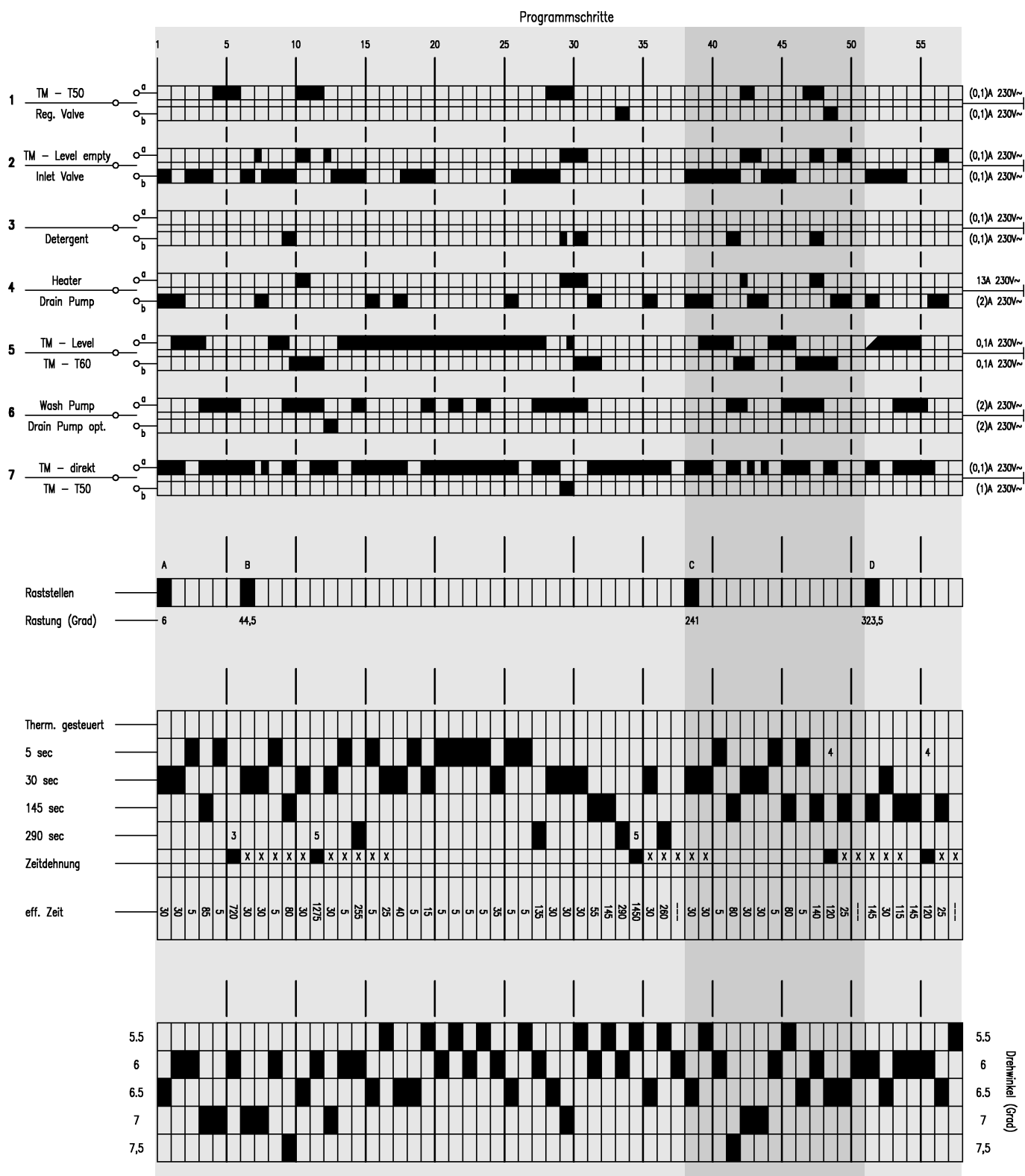


- |   |  |    |                                 |    |                     |
|---|--|----|---------------------------------|----|---------------------|
| 1 | Inlet valve                                    | 8  | Softener                        | 16 | Filter              |
| 2 | Air break                                      | 9  | Salt container                  | 17 | Circulation pump    |
| 3 | Regeneration water dosage                      | 10 | Non-return valve salt container | 18 | Flow heater         |
| 4 | Overflow safety level                          | 11 | Regeneration valve              | 19 | Drain pump          |
| 5 | Safety overflow                                | 12 | Safety inlet hose               | 20 | Non-return valve    |
| 6 | Inlet to sump from regeneration dosage chamber | 13 | Base tray                       | 21 | Spray arms          |
| 7 | Regeneration dosage chamber                    | 14 | Float switch                    | 22 | Roof-mounted shower |
|   |  | 15 | Pressure switch                 | 23 | Tub vent            |
|   |  |    |                                 | 24 | Sump assembly       |

## 6. Work flow schematic (example)

| Step | POS. | Function                    | Time in sec.<br>ZM |  |
|------|------|-----------------------------|--------------------|--|
| 1    | ⇒    | Pumping out Filling         | 30                 |  |
| 2    |      | Pumping out                 | 30                 |  |
| 3    |      | Filling                     | P+ 5               |  |
| 4    |      | Filling Washing             | 85                 |  |
| 5    |      | Washing Heating             | 5                  |  |
| 6    |      | Washing                     | 720                |  |
| 7    | ⇒    | (Filling)                   | 30                 |  |
| 8    |      | Pumping out                 | P<+ 30             |  |
| 9    |      | Filling                     | P+ 5               |  |
| 10   |      | Filling Washing Detergent   | 80                 |  |
| 11   |      | Washing Heating             | T50/T60+ 30        |  |
| 12   |      | Washing                     | 1275               |  |
| 13   |      | Pumping out                 | (P<+) 30           |  |
| 14   |      | Filling                     | P+ 5               |  |
| 15   |      | Filling Washing             | 255                |  |
| 16   |      | Pumping out                 | 5                  |  |
| 17   |      | Break/pause                 | 25                 |  |
| 18   |      | Pumping out                 | 40                 |  |
| 19   |      | Filling                     | P+ 5               |  |
| 20   |      | Filling Washing             | 15                 |  |
| 21   |      | Break/pause                 | 5                  |  |
| 22   |      | Washing                     | 5                  |  |
| 23   |      | Break/pause                 | 5                  |  |
| 24   |      | Washing                     | 5                  |  |
| 25   |      | Break/pause                 | 35                 |  |
| 26   |      | Pumping out                 | 5                  |  |
| 27   |      | Filling                     | P+ 5               |  |
| 28   |      | Filling Washing             | 135                |  |
| 29   |      | Filling Washing             | 30                 |  |
| 30   |      | Washing Heating Clear rins. | T50+ 30            |  |
| 31   |      | Washing Heating Clear rins. | T60+ 30            |  |
| 32   |      | Pumping out                 | 55                 |  |
| 33   |      | Break/pause                 | 145                |  |
| 34   |      | Regeneration                | 290                |  |
| 35   |      | Break/pause                 | 1450               |  |
| 36   |      | Pumping out                 | 30                 |  |
| 37   |      | Break/pause                 | 260                |  |
| 38   |      | OFF                         | OFF ---            |  |
| 39   | ⇒    | Pumping out Filling         | 30                 |  |
| 40   |      | Pumping out Filling         | 30                 |  |
| 41   |      | Filling                     | P+ 5               |  |
| 42   |      | Filling Washing Detergent   | 80                 |  |
| 43   |      | Washing Heating             | T50/T60+ 30        |  |
| 44   |      | Pumping out                 | P<+ 30             |  |
| 45   |      | Filling                     | P+ 5               |  |
| 46   |      | Filling Washing             | 80                 |  |
| 47   |      | Washing                     | 5                  |  |
| 48   |      | Washing Heating Clear rins. | T50/T60+ 140       |  |
| 49   |      | Regeneration                | 120                |  |
| 50   |      | Pumping out                 | P<+ 25             |  |
| 51   |      | OFF                         | OFF ---            |  |
| 52   | ⇒    | Pumping out Filling         | 145                |  |
| 53   |      | Filling                     | P+ 30              |  |
| 54   |      | Filling Washing             | 115                |  |
| 55   |      | Washing                     | 145                |  |
| 56   |      | Washing                     | 120                |  |
| 57   |      | Pumping out                 | P<+ 25             |  |
| 58   |      | OFF                         | OFF ---            |  |

## 7. Program controller steps (example)



## 8. Wirings (examples)

